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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/777,340	02/06/2001	Takeshi Kawasaki	FUJA 18.301	5183
26304	7590	03/29/2005	EXAMINER	
KATTEN MUCHIN ZAVIS ROSENMAN 575 MADISON AVENUE NEW YORK, NY 10022-2585			NGUYEN, HANH N	
			ART UNIT	PAPER NUMBER
			2662	
DATE MAILED: 03/29/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/777,340

Applicant(s)

KAWASAKI ET AL.

Examiner

Hanh Nguyen

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***DETAILED ACTION***

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-9, 11-14, 16 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Kohzuki et al (US 6,512,741).

Regarding claims 1, 2, 4, 5, 16 and 17, Kohzuki discloses a traffic shaper that controls the flow of incoming variable length IP packets and corresponds to the packet flow control apparatus performing flow control of packets of the present application. In the invention described by the Kohzuki reference, the packet buffer 1410 of figure 14 corresponds to the buffer memory for temporarily accumulating arrived packets until a sending time for each packet of the present application;

The packet length identifier circuit 1499 of Kohzuki corresponds to the counter means updated based on a rate determined in accordance with a packet length calculated by a counter value of the counter means and limited flow of packets. The packet length identifier circuit 1499 determines the length of the incoming packets (see col 20 lines 39-67);

The calculation unit 1440 of Kohzuki is used to calculate the sending time of the incoming packets and corresponds to the sending time determining means for determining the

sending time of each packet based on the counter value and a present time. See col 20 lines 47-67; and

The packet buffer read controller 1414 of Kohzuki reads out the packet from the buffer based on the sending time and corresponds to the sending order control means for managing a sending order of each packet accumulated in the buffer memory, and for sending a read instruction of each packet to the buffer memory, based on the sending time determined by the sending time determining means. See col 19 lines 15-20; The invention of Kohzuki utilizes calculation unit 1440 to determine the sending time of a respective packet based on the parameters from packet buffer address memory 1412 and packet length identifier circuit 1499. The sending time calculation is then sent to the packet buffer read controller 1414 where the packets held in the buffer are read out. This corresponds to the features of the flow control apparatus and, in particular, the sending time determining means of the present application as disclosed in claims 1, 2, 4 and 5. See col 19 lines 39-67. Col 16, lines 1-47 of Kohzuki discloses the determination of the sending time of the next cell by calculation unit 1440. This corresponds to the determination of the sending time of the next packets by the sending time determining means of the present application.

Regarding claims 3 and 6, Kohzuki discloses a traffic shaper that controls the flow of incoming variable length IP packets and corresponds to the packet flow control apparatus performing flow control of packets of the present application, which

comprises the packet buffer 1410 (see figure 14) corresponds to the buffer memory for temporarily accumulating arrived packets until a sending time for each packet of the present application;

The packet length identifier circuit 1499 of Kohzuki corresponds to the counter means updated based on a rate determined in accordance with a packet length calculated by a counter value of the counter means and limited flow of packets. The packet length identifier circuit 1499 determines the length of the incoming packets. (see col 20 lines 39-67);

The calculation unit 1440 calculates the sending time of the incoming packets and corresponds to the sending time determining means for determining the sending time of each packet based on the counter value and a present time. See col.20, lines 47-67; and the packet buffer read controller 1414 (fig.14) reads out the packet from the buffer based on the sending time and corresponds to the sending order control means for managing a sending order of each packet accumulated in the buffer memory, and for sending a read instruction of each packet to the buffer memory, based on the sending time determined by the sending time determining means. See col 19 ,lines 15-20;

The calculation unit 1440 to determine a sending interval to indicate when the packet can be sent. This interval calculation is adjusted to allow accommodation or absorption of fluctuations due to the difference between the numbers of bytes of sending packets. This adjustment of the sending interval corresponds to the recovery time of the present application. The sending interval calculation is then used to calculate the sending time and later sent to the packet buffer read controller 1414 to control the transmission of packets from packet buffer 1411. (See col 20 lines 28-62).

Regarding claims 7, 8, and 9 with the features in parent claims 4, 5, and 6 addressed above, respectively, Kohzuki discloses when the packet buffer is empty, the calculation of the sending time of the input packet is done and forwarded to the packet buffer read controller 1414 to output said input packet. This corresponds to the process the present application of when there are no packets belonging to the control unit in the buffer memory for the control unit of the input packets, the sending time determining means determines the sending time of the input packet when the input packet is written into the buffer memory, and transfers the sending time to the sending order control means, and updates the parameters in the memory means based on the sending time. See col 16 lines 35-45.

Regarding claim 11 with the features in parent claim 1 addressed above, Kohzuki discloses a sorting unit 1445 that sorts out the order of packets and leaves them in a sorting memory, where the contents are later sent to the packet buffer read controller 1414 to output the respective packets. This sorting unit and memory of Kohzuki corresponds to the sending order control means of the present application, where the sending order control means previously sorts the sending order of the packets accumulated in the buffer memory, based on the sending time information of the packets received from the sending time determining means.

Regarding claims 12 and 14 with the features in parent claim 1 addressed above, Kohzuki discloses where sorting unit 1445 divides packets into separate priority levels, such as high and low. Packets with different priorities are transmitted at different times. Packets with a priority of "high" are sent first. The process of where the sorting unit 1445

divides packets into separate priority levels corresponds to the sending order control means dividing the groups of packets into a plurality of time zones. See col 15 lines 24-47.

Regarding claim 13 with the features in parent claim 1 addressed above, Kohzuki discloses a the packet buffer read controller 1414 sorts the sending time into the soding memory before the packet is supposed to be sent. The sending time is stored temporarily in various memories, such as contract sorting 1446, sorting memory 1447, and packet sending unit 1420. These memories correspond to where the sending order control means stores the sending time to a different memory, and sorts the sending time into the soding memory before the time that the packet needs to be outputted.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kohzuki (Pat.6,512,741) in view of Kilkki (US 6,081 ,505).

Regarding claim 10, Kohzuki fails to disclose where the parameters in the memory means are normalized based on a limited flow value, so as to set an update

rate of the counter means to "1". Kilkki discloses a cell scheduling system where the link capacity utilizes a normalized value of  $C=1$ . See col 19, lines 55-67. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kohzuki's apparatus to utilize parameters that are normalized in order to simplify calculations of the sending time and to set a counter limit, as taught by Kilkki. The modification creates an efficient system that schedules packets in a timely manner due to the reduced complexities of the timing computations. See col 4, lines 30-51 of Kohzuki.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kohzuki in view of Keenan et al (US 6,570,890).

Regarding claim 15 with the features in parent claim 1 addressed above, Kohzuki discloses the use of sorting packets by priority. See col. 15, lines 25-37. Kohzuki, however, fails to expressly disclose where the packet having a shorter packet length is preferentially sent from the sorting memory. Keenan discloses a method of transmission and control of data packet through a network that utilizes small packets to carry delay sensitive information, as small packets transmitted out the node are less prone to errors. See col. 17, lines 19-30.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kohzuki's apparatus to have a preference in transmitting packets having a shorter length in their respective priority groups, as taught by Keenan. The motivation is a system with less latency for the other packets that are sent after the shorter, preferentially chosen packets. Transmission of the shorter packets first would ensure that said packets would have a smaller chance of encountering complications in output. See col 4 lines 30-51 of Kohzuki.



***Response to Arguments***

Applicant's arguments filed on 1/5/05 have been fully considered but they are not persuasive.

Applicant argues that Kohzuki fails to disclose a sending time determining means for determining a sending time of each packet updated based on packet length by a flow of packets. Examiner would like to describe fig.14 of Kohzuki as follow: packet length identifier 1499 ( a counter) identifies packet length 91 from packet buffer read controller 1414. The packet length information 91 is transmitted to calculator 1441 and calculation for priority 1431( sending time determining means) which determine an estimated sending time (determining sending time of packet). See col.20, lines 40-50 & col.19, lines 19, lines 10-20. Therefore, examiner believes that Kohzuki overcomes the claim limitation.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Nguyen whose telephone number is 571 272 3092. The examiner can normally be reached on Monday-Friday from 8AM to 5PM. The examiner can also be reached on alternate

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached on 571 272 3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**HANH NGUYEN**  
**PRIMARY EXAMINER**

A handwritten signature in black ink, appearing to read 'H. Nguyen', is written below the printed name and title.